27 July 1966

STAFF STUDY -- FOR PHASE II, INTEGRATED INFORMATION SYSTEM

1. PROBLEM. To proceed with Phase II of a 4-phase program which will improve the NPIC digital information processing system to better service current and future requirements in the field of imagery exploitation.

2. FACTS BEARING ON THE PROBLEM.

a. An information processing system, in the context of NPIC, can be defined as a network of related subsystems developed according to an integrated scheme for performing storage, retrieval, and manipulation of digitally representable information.

b. The system presently in use started in 1956 before the establishment of NPIC. An ALWAC III-E Computer was installed in 1957 for processing of metrical information. In 1961, an IBM 1401 was installed for storage and retrieval applications. The present system has evolved in response to increasing requirements from various components of the Center without an overall review and analysis of these requirements in relation to the functions of the Center that is essential for the design of a digital information processing system which is both responsive to the Center's needs and cost effective.

c. The increasing frequency of photographic inputs and the resultant acceleration of the exploitation process has made it difficult to maintain the substantive data base sufficiently current to satisfy expanded requirements with the existing file structures and maintenance routines.

d. The lack of flexible methods for extracting the variety and combinations of information requested from this data base has necessitated the creation of special files containing redundant information unnecessarily magnifying updating procedures and file size.

e. A comprehensive file restructuring, coupled with an on-line updating and retrieval capability, is indicated if the relevancy and timeliness of pertinent information is to be improved and maintained.

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2. Phase I of a 4-phase program to implement an integrated information system for NPIC is presently under contract with the [redacted] Based on the Phase I-derived functional specifications, it will be possible to develop the detailed design and description of the system in Phase II. Phase III involves computer programming and hardware procurement; phase IV, installation, conversion and checkout. The goal is to have the System operational by the spring of 1968.

3. DISCUSSIONS.

a. Current Procedures. As a first step in providing more timely and up-to-date information processing, the present NPIC computers, and IBM 1401 and a Univac 490, are being replaced by two Univac 494 computers within the next year and a half. To obtain an efficient utilization of the new computers, it is also necessary to restructure the existing data base and revamp the present computer programs. As an example, the Target Brief File, initially implemented for use by the imagery analyst during immediate scans of imagery has increased in size until currently more than 27,000 targets are retained in the file. Although provisions were made for recalling lists of targets by country, WAC coordinates, NPIC target number, and BE number, no inherent means were provided to retrieve information by subject category, mission number, date, or subcategory within the Target Brief. As a result, separate redundant files were created to obtain access to information already in the Target Brief file. A printout of the complete file takes approximately 30 hours of computer time, and is currently required twice a month, although less than 10 percent of the information in the printout is required.

b. Origin of Concept. Both the IG Survey of NPIC in June 1965, and the Land Panel Report of August 1965, recognized that the computer system within NPIC was rapidly becoming saturated and recommended that steps be taken to improve the information processing procedures so that the anticipated increased demands for computer time could be satisfied. As a result of these recommendations, proposals were solicited for an Information Processing System Study encompassing the following four major phases:

Phase I Analysis and Projection of System Requirements

Phase II System Design

Phase III System Engineering, Procurement and Programming

Phase IV System Installation and Test

A contract for Phase I, was let in March of 1966 and will result in delivery of the Conceptual Design and Functional Specifications for an Integrated Information System on 22 August 1966.

c. Proposed Project. During Phase II (System Design) the following will be performed: (1) alternative methods for performing the system functions, based on the Conceptual Design generated under Phase I, will be developed and evaluated, (2) the detailed system configuration and overall operation will be established, (3) detailed specifications for system components, including hardware, computer programs, files, procedures and facilities, will be prepared; and, (4) a detailed system implementation plan will be submitted. Reports from the contractor covering monthly progress will also be required.

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d. Selection of Contractor. The contractor selected for the performance of Phase II is [redacted] 25X1A has performed well in the execution of Phase I and is well qualified to perform the additional work described. Since the performance of Phase II is dependent on 25X1A the knowledge gained through the analysis and investigation of NPIC requirements and processes under Phase I, it is prudent to select [redacted] for Phase II work. All work will be 25X1A performed either at [redacted] where a special area is maintained under appropriate security controls, or within the physical confines of NPIC.

e. Program Phasing. The total program phasing is shown in TAB C. The proposed period of performance for Phase II, shown in TAB B, will cover eight and one-half months. The first six and one-half months will be devoted to developing and evaluating alternate systems and preparing a description of the chosen system. A report covering this work will be issued at that time. The remaining two months will be spent preparing detailed specifications for system components and preparing the implementation plans. Reports covering these tasks will then be issued. As the need for long-lead-time components is discovered, efforts will be made to promulgate the appropriate detailed specifications so that procurement can be initiated in advance of the issuance of the final reports.

f. Coordination. Coordination within the Agency (OCS and ORD) was accomplished prior to the initiation of the Phase I contract and has been continuing throughout Phase I. Coordination will continue through Phase II.

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g. Alternatives. Phase II must be considered in its entirety and cannot be implemented by a series of sub-tasks. Failure to perform any of the proposed sub-tasks will essentially negate the entire effort. The following alternatives, however, are possible:

(1) Although it would be possible to perform the tasks sequentially instead of concurrently (thus extending the program into FY-68 and making possible split funding), no financial advantage would be gained. NPIC would merely be delayed in achieving its intended goals.

(2) The whole of Phase II could be delayed until FY-68. This course of action would also delay the intended goals and has the additional disadvantages of permitting a time-engendered dilution of the basic knowledge gained in Phase I, the loss of contractor personnel familiar with NPIC functions and processes, and a potential reduction in the overall level of technical competence of contractor personnel assigned to the project.

The least desirable alternate would be the cessation of all contractual work beyond Phase I. This choice would solve none of the NPIC information processing problems and would mean that funds already expended on Phase I would have been wasted.

4. CONCLUSIONS.

a. The present NPIC computerized processing system is incapable of adequately meeting the current and anticipated needs for pertinent information in a timely and relevant fashion.

b. Prior to the implementation of an improved system, alternative configuration of systems fulfilling the conceptual requirement must be developed and evaluated, detailed specifications for the system components must be generated, and an implementation plan must be devised.

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5. RECOMMENDATIONS. It is recommended that a contract for Phase II be negotiated with [redacted] encompassing the scope of work delineated in the attached proposal at a cost of [redacted]

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6. REFERENCES AND ATTACHMENTS.

TAB A. Catalog Form
TAB B. Program Phasing, Phase II
TAB C. Total Program Phasing

Attachment: [redacted]

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SECRET (When Filled In) TAB A

R & D CATALOG FORM

DATE: 27 July 1966 - Revised

1. PROJECT TITLE/CODE NAME: Integrated Information System 25X1A

2. SHORT PROJECT DESCRIPTION: Phase II follow-on of the Information Flow Analysis of NPIC Data Base. (Detailed system specifications)

3. CONTRACTOR NAME: [redacted]

4. LOCATION OF CONTRACTOR

5. CLASS OF CONTRACTOR

6. TYPE OF CONTRACT

7. FUNDS 25X1A

FY 1966 $ [redacted]

FY 1967 $

FY 1968 $

8. REQUISITION NO.

9. BUDGET PROJECT NO.: NP-H-1-08016

10. EFFECTIVE CONTRACT DATE (Begin - end)

11. SECURITY CLASS.
A.A. - Secret
T. - Unclassified
W. - Top Secret

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

DDI/NPIC/P&DS/[redacted] 25X1A

13. REQUIREMENT/AUTHORITY: This project was originally initiated by NPIC/IPD to improve information processing as recommended by IG Survey in June 1965 and Land Panel Report of August 1965.

14. TYPE OF WORK TO BE DONE: Applied Research. Develop alternate methods for performing system functions specified by Phase I conceptual designs; evaluate alternates; establish detailed system configurations; specify system components; develop implementing plan.

15. CATEGORIES OF EFFORT

MAJOR CATEGORY	SUB-CATEGORIES
Information Handling	Automatic Processing
	Data Handling
	Data Management
	Information Processing

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.
Reports to cover: (1) detailed system description of Phase II, (2) detailed specifications for system components including hardware, computer program, file procedures and facilities, (3) detailed system implementation plan.

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION
Coordination was accomplished with OCS and ORD prior to the initiation of the Phase I contract and will continue throughout Phase II.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required)
This is the second phase of a four-phase program to implement an integrated information processing system for NPIC. Based on the Phase I derived functional specifications as approved by NPIC, Phase II will develop the detailed design and description of the system. The required system and system components will be analyzed and evaluated and the system implementation will be planned.

19. APPROVED BY AND DATE

OFFICE	DEPUTY DIRECTOR	DDCI

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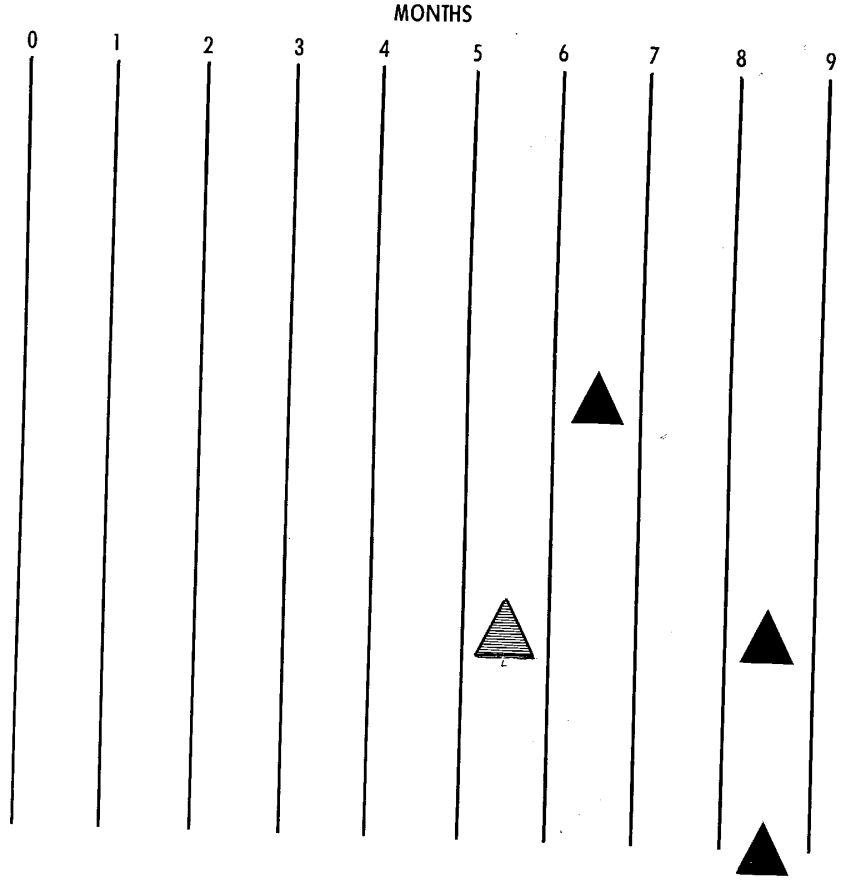
TAB B

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

INTEGRATED INFORMATION SYSTEM
PHASE II



DEVELOP & EVALUATE ALTERNATES

1. ALTERNATE METHODS OF PERFORMING SYSTEM FUNCTIONS
2. EVALUATE ALTERNATES

SYSTEM DESCRIPTION

1. DESCRIBE SYSTEM CONFIGURATION
2. DESCRIBE OVERALL SYSTEM OPERATION
3. DESCRIBE SYSTEM COMPONENTS
4. DESCRIBE COMPONENT INTERFACE

DETAILED COMPONENT SPECIFICATION

1. HARDWARE
2. COMPUTER PROGRAM
3. FILES
4. PROCEDURES
5. FACILITIES

DETAILED IMPLEMENTATION PLAN

1. SCHEDULES
2. BUDGETARY COSTS FOR:
   a. PROCUREMENT
   b. INSTALLATION

▲ REPORT DELIVERY

▲ L LONG LEAD TIME ITEMS

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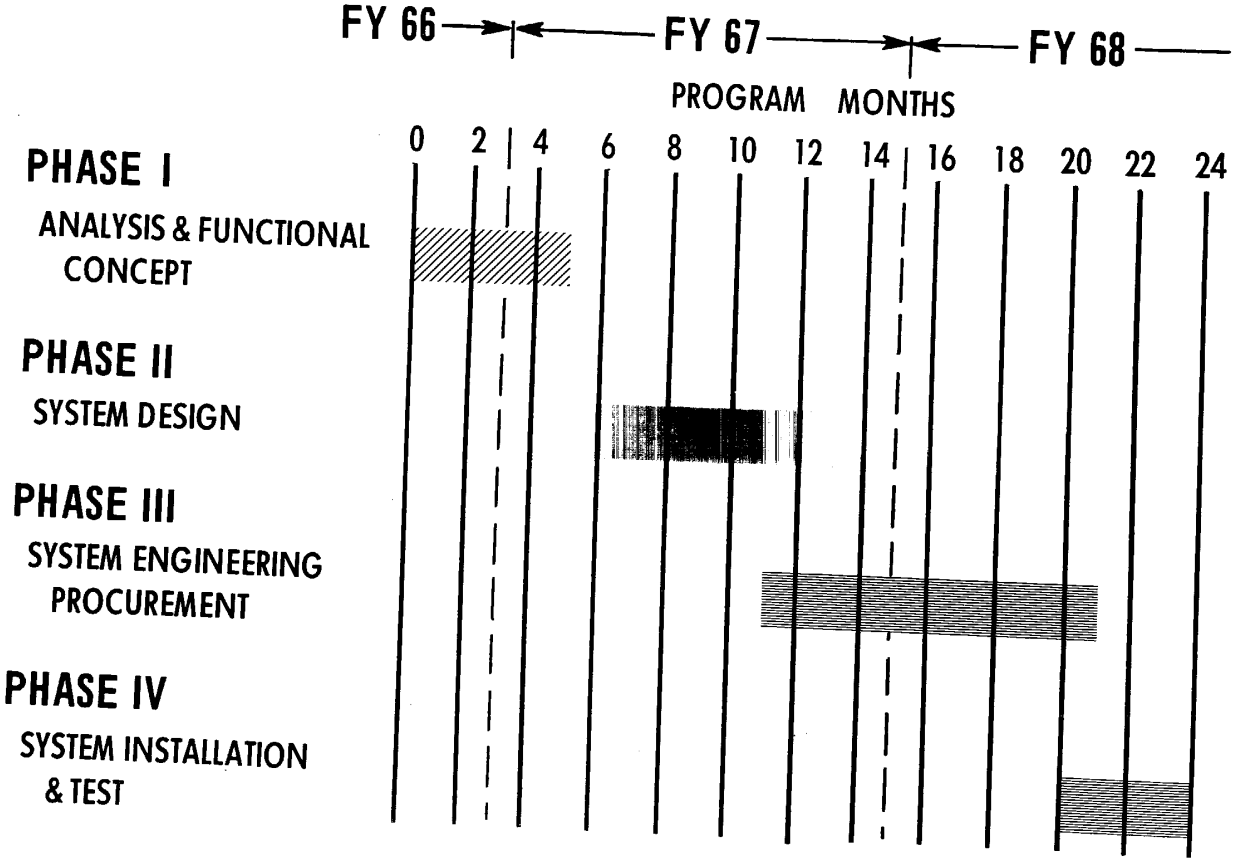
TAB C.

NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

INTEGRATED INFORMATION SYSTEM PROGRAM



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